It is not for us to lift the veil which screens the sanctities of domestic life; but in the portrait we have sketched with a conscious feebleness, the reader will see what are the lineaments of a great Philosopher in his public relations; the mode, the aims, the hopes, the features, of his outer life. The noble example, the inevitable stimulativeness of such a life, are priceless. Though not lifting the veil of his home, we may say of him, that he there realised just what the reader would picture and would wish that life to be. He was a firm and a most active friend; he had no jealousies; he avoided all scientific feuds; he gladly accorded a helping hand to those who consulted him in scientific difficulties; he never discouraged, and still less disparaged, men younger than or inferior to himself; he was pleased with the appreciation of his works, but this was not an object of his solicitude; we quote the words of a discriminating critic, for they are not words of extravagance, when we say of him, that "his was a life full of the serenity of the sage, and the docile innocence of a child." Happy the pursuits that can lead to such results.

Herschel's whole life, like the lives of Newton and Faraday, confutes the assertion, and ought to remove the suspicion, that a profound study of Nature is unfavourable to a sincere acceptance of the Christian Faith.

Surrounded by an affectionate family, of which he had ever been the pride, the guide, and the life, John Herschel died as he had lived in the unostentatious exercise of a devout, yet simple, faith. The recollection of the long procession of his many friends, numbering among them some of the brightest and choicest intellects of his countrymen, still dwells vividly in our minds: what was mortal of him, we laid in Westminster Abbey, close by the side of Newton. The inscription on his monument is a happy but condensed expression, of the most deeply cherished thoughts of his life:—

JOANNES HERSCHEL
GULIELMI HERSCHEL
NATU OPERA FAMA
FILIUS UNICUS
"CŒLIS EXPLORATIS"
HIC PROPE NEWTONUM
REQUIESCIT
GENERATIO ET GENERATIO
MIRABILIA DEI NARRABUNT
PSALM CXLV. 4, 5.
VIXIT LXXIX. ANNOS
OBIIT UNDECIMO DIE MAII
A.D. MDCCCLXXI. [C. P.]

Sir Roderick Impey Murchison, Bart. K.C.B., was born on February 19, 1792, at Tarradale, a small estate in the possession of his father, in eastern Ross-shire, N.B. He was the

eldest son of Mr. Kenneth Murchison, and of Barbara, daughter of the late Mr. Kenneth Mackenzie, of Fairburn, in the same county. At a very early age he left Scotland for Dorsetshire, and, excepting a short period when he resided with his mother in Edinburgh, his boyhood was principally spent in England, where he received his education. He was first placed in the grammar-school attached to the Cathedral of Durham, but exhibiting a strong inclination for the military profession he was removed to the Royal Military College at Great Marlow. He subsequently attended, for a few months only, the classes at the Edinburgh University, but his studies were interrupted by receiving, in 1807, a commission in the army, he at the time being just fifteen years of age. In 1808 he joined the forces in the Peninsula, under Sir Arthur Wellesley, first as ensign in the 36th Regiment of Foot, and afterwards serving either on the staff of his uncle, Sir Alexander Mackenzie, or as Captain in the 6th Dragoons. He shared the varied fortunes of the division of the army to which he was attached, having fought in three general actions, Roliça, Vimiera—where he carried the colours of his regiment—and Corunna, including all the hardships and dangers attending the memorable retreat under Sir John Moore. Returning to England, Captain Murchison married, in 1815, Charlotte, only daughter of the late General Francis Hugonin, and thus concluded, as he was frequently heard to remark, the military episode of his life.

Murchison was, however, of far too active a disposition to remain in a state of idleness at this time of life, so in the absence of better employment the exuberance of his spirits found vent in the excitement of the chase. Fox-hunting became one of his chief pastimes, and he entered into its pleasures with all the energy at his command. He might have continued a popular, sporting, country gentleman, but for the influence of Mrs. Murchison, a lady possessing a considerable knowledge of conchology and a fondness for natural history pursuits. Through her he received his first encouragements to pursue the study of geological science. It happened, also, that about this time he accidentally met Sir Humphry Davy at the house of Mr. Morritt of Rokeby. Sir Humphry, seeing too much practical sense in young Murchison for a mere fox-hunter, advised him to attend the lectures on physical science at the Royal Institution. He not only attended the lectures, but he followed them up by a series of practical experiments on his own account. To do this in a satisfactory manner he placed himself under the private instruction of the late Mr. Richard Phillips, F.R.S. From this date the scientific career of Murchison may be said to have commenced.

His first paper was presented to the Geological Society in 1825, entitled *A Geological sketch of the north-western extremity of Sussex, and the adjacent parts of Hampshire and Surrey.* It is published in Volume II. of the *Transactions* of that Society.

Murchison was now thirty-three years old, and henceforth devoted his whole energies to the pursuit of his adopted science. Year after year we find him occupied in the personal examination of the geological formations of various districts in Great Britain and on the Continent, beginning in 1826 with the coal strata in Sutherlandshire, which he demonstrated to be a branch of the Oolite series. In 1827 he again visited the Highlands in company with the now venerable Professor Adam Sedgwick, when they succeeded in proving that the primary sandstone of M'Culloch was really nothing more than the true old red sandstone, now also called "Devonian." In the following year, accompanied by Mr. (now Sir Charles) Lyell, he examined the volcanic rocks of Auvergne and the tertiary strata of Southern France. In this manner, first in one country and then in another, he continued his observations in the field, adding fact upon fact, all of which are recorded in the *Transactions* of the Geological Society and in other scientific publications. In the catalogue of scientific papers published by the Royal Society, Sir Roderick Murchison is credited with 111 separate papers, and twenty-six published in conjunction with other authors. To all the labour required in the preparation of such a mass of work must be added that necessarily involved in the writing of the valuable treatises, published separately — *The Silurian System* — *On the Geology of Russia* — and the successive editions of *Siluria*. The last-named is perhaps the best known of his writings, and, more than any other of his works, has helped to lay the foundation of Sir Roderick's fame. It is entitled *Siluria; or the History of the oldest known Rocks containing organic Remains, with a brief Sketch of the Distribution of Gold over the Earth;* and includes a general view of the structure of the Earth's crust, but more particularly of the more ancient series of strata, of which the Silurian system is the lowest; it also includes a summary of the author's opinions with respect to geological science, especially on those matters where he has differed from his distinguished friends, Professor Sedgwick and Sir Charles Lyell.

As a geographer, Sir Roderick Murchison stood in the foremost rank. The great influence he held over the proceedings of the Royal Geographical Society could be perceived in a moment by the most casual visitor to its ordinary meetings. No one took a greater interest in the progress of physical geography than he did, down to the last few days preceding his death. His annual addresses at the anniversary meetings of the Society always contained an excellent epitome of geographical discovery during the year. His kind and courteous manners, coupled with the zeal and energy with which, as President, he supported the cause and personal well-being of travellers, both before and after their journeys, made him at once their trusted counsellor and friend. His name is thus known to all the civilised world as the chivalrous defender of such men as Livingstone, Speke, Du Chaillu, and others, against the adverse criticisms of some of their fellow-geographers.

With the attention of Sir Roderick so engrossed in geological and geographical pursuits, he still found time to interest himself in some of the recent great discoveries of observational astronomy, especially of those relating to the physical constitution of the solar photosphere and corona. He, however, never took any active part in the promotion of astronomical research, for he wisely left to others, more qualified than himself, the practical part of our science. But in one important branch he has done good service. He took every opportunity of impressing upon travellers the advantages to be derived from the frequent determinations of the absolute longitudes and latitudes in unexplored regions by astronomical observations. He was therefore always anxious that travellers, before leaving England, should make themselves acquainted with the practical use of the sextant and other portable instruments. Through his recommendation, also, the accumulated observations of lunar distances, meridional altitudes, temperatures of the boiling point of water, &c., made by Captain Speke, M. Du Chaillu, and other African travellers, were placed under the care of a professional astronomer, in order that they might be reduced by the use of the most approved astronomical methods. In this manner the geographical positions of several important points in the interior of Africa have been satisfactorily determined. Sir Roderick also showed his interest in our Society, and in astronomy, by becoming, in 1850, one of our Fellows.

On the death of Sir Henry De la Beche, in 1855, Sir Roderick Murchison was chosen to succeed that eminent geologist as Director of the Museum of Practical Geology in Jermyn Street, and as Director-General of the Geological Survey of England. It is not, however, necessary in this brief notice to enumerate more than a selection of the honours, royal and academic, which have been conferred on Sir Roderick in recognition of his scientific labours. By his own sovereign he was created a Knight Bachelor in 1846, a K.C.B. in 1863, and finally, a Baronet in 1866. He also received numerous foreign orders of distinction, including the Grand Cross of St. Anne, and of St. Stanislaus of Russia, and the dignity of Grand Officer of the Order of the Crown of Italy. It is almost needless to add that the Universities of Oxford, Cambridge, and Dublin, recognised his researches in science by the bestowal on him of their honorary degrees. In 1826, he was chosen a Fellow of the Royal Society, and subsequently became a member of the Council and a Vice-President. He was one of the founders of the Royal Geographical Society, and was first elected its President in 1843. He was re-elected at intervals up to 1862, since which year, till May 1871, he, by the general consent of the Society, remained in office. He also served as Secretary and President of the Geological Society. In addition to the numerous English and Foreign Societies of which he was an honorary member, Sir Roderick was also a Trustee of the British Museum, the Hunterian Museum, and of the British Association for the Advancement of Science. He received the

Copley Medal from the Royal Society, the Prix Cuvier from the French Institute, the Brisbane Medal from the Royal Society of Edinburgh, the Wollaston Medal, and other honours of the same kind.

In 1869, Sir Roderick sustained a great loss by the death of Lady Murchison, his companion of more than half a century. The first visible sign of his own decay manifested itself in an attack of paralysis in the latter part of 1870. He was in a dangerous condition for some time, and he remained afterwards in a more or less delicate state of health. However, he was able occasionally to appear in public; but he was never thoroughly himself again, and was obliged to delegate to others the duty of Chairman at the meetings of the Royal Geographical Society. Two months before his death he was seized with loss of speech, accompanied with difficulty in swallowing. These unfavourable symptoms gradually subsided, and his general health appeared to be restored to its usual state. But on Thursday, October 19, he caught a cold during a drive, which subsequently resolved itself into bronchitis. His constitution was not sufficiently strong to withstand this sudden attack, and he quietly sank under its influence. He passed peacefully away on the evening of Sunday, October 22, 1871, in the eightieth year of his age.

"Such has been the praiseworthy life of this illustrious man," remarks a writer in the *Athenæum;* "and while his fellow-countrymen have long since pointed out with pride to the stranger the house where Murchison was born, there are mountains and rivers in distant lands which shall tell out his fame to future ages in tones far louder than could ever re-echo from the vaults of Westminster Abbey."

William Rutherford, LL.D. was for many years one of the mathematical masters at the Royal Military Academy, Woolwich, and one always popular with his pupils. He was a mathematician of no mean rank, and his name is well known as the author of several mathematical pamphlets; one of which, on the solution of spherical triangles, is particularly worthy of notice. Dr. Rutherford was also a regular correspondent, both as proposer and solver of problems, to the Mathematical Section of the *Lady and Gentleman's Diary*, and his successful solutions of some of the most difficult questions gained him considerable notice among the readers of that once popular annual. He delighted in what he used to call a "very pretty problem," that is, in some question involving a delicate mathematical analysis; and of late years, when he was what he called "an idle man," nothing pleased him more than to have submitted to him some question which, perhaps, might require a week's work before a solution was arrived at.

Dr. Rutherford had great skill as an instructor, his explanations being remarkable for their clearness. He also impressed on his pupils the necessity of their treating the study of mathematics